

1 3. (TWICE AMENDED) A constant-power brushless DC motor,
2 comprising:

3 a stator wound in parallel by phases and polarities
4 and configured of n multi-phases, each of the winding coils
5 of the stator which are not connected with one another is
6 connected to each of n full H-bridges, n full H-bridges are
7 connected to a DC power supply in parallel;

8 a rotor having a predetermined number of polarities,
9 which is required to concentrate magnetic flux on
10 excitation area;

11 a commutation encoder including sensing regions and
12 nonsensing regions, the commutation encoder being
13 externally set to one side of the shaft of the rotor; and

14 two photo sensors set to each phase, the two photo
15 sensors being connected to a half H-bridge of each phase,
16 to switch the half H-bridge on and off, wherein the width
17 of each of the sensing regions of the commutator encoder is
18 determined to allow a phases among n phases to be excited
19 constantly, the corresponding photo sensors recognizing the
20 a phases excited,

21 wherein the stator has narrow slots to remove flux
22 cancel phenomenon between every winding slot and to remove
23 peak current between said excited phase and said inexcited
24 phase, and

25 wherein the number of phases among the n phases, which
26 will be excited, is determined by the distance between the
27 sensing regions, the distance between the sensing regions
28 being determined through the following expression,

29 width of sensing regions

30 = $(2\pi \times \text{number of phases to be excited}) / (\text{number of polarities of rotor} \times \text{number of phases of motor})$ (°),
31 the number of sensing regions in the commutation
32 encoder being determined through the following expression,
33 number of sensing regions
34 = $(\text{number of polarities of rotor})/2$,
35 the distance between the photo sensors on a sensor
36 plate being determined by the following expression,
37 distance between photo sensors
38 = $2\pi / (\text{number of polarities of rotor} \times \text{number of phases of motor})$ (°),
39 among the n phases, a phases being excited but b
40 phases not being excited all the time.

In accordance with 37 C.F.R. § 1.121(c)(1)(ii), separate sheets with the rewritten claim marked-up to show the changes made to the previous version of the claim, is filed herewith.

REMARKS

In view of the foregoing amendments and the following remarks, the applicant respectfully submits that the pending claims are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicant respectfully requests that the Examiner contact the undersigned to schedule a telephone**